

CLAIMS

What is claimed is:

1. A method for creating a new control chart, the method comprising:
providing a database including a plurality of SPC control charts and a plurality of tables;
determining that information stored in at least one of the plurality of tables has changed;
updating the at least one of the plurality of SPC control charts with the changed information, if the changed information can be described by at least one of the plurality of SPC control charts; and
creating a new control chart that can describe the changed information, if the changed information cannot be described by at least one of the plurality of SPC control charts.
2. The method as set forth in claim 1, wherein:
providing the database includes storing the plurality of SPC control charts and the plurality of tables in the database;
determining whether information has changed is followed by determining whether the changed information can be described by at least one of the plurality of SPC control charts; and
the new control chart is created in a basic record system that includes a server coupled to the database.

3. The method as set forth in claim 2, wherein the SPC control charts include information relating to the detection of abnormal process trends from the statistical behavior.

4. The method as set forth in claim 3, wherein:
the plurality of tables are selected from a group consisting of a primary route table, a sub route table, a tool table, a recipe table, a specification table, a measure field table, and a measure item table; and
the method further comprises verifying the format of the plurality of SPC control charts and the plurality of tables.

5. The method as set forth in claim 2, further comprising determining whether the new control chart is a new trend chart.

6. The method as set forth in claim 5, wherein the new trend chart is defined as a control chart that has not been previously used on tools of a type that is associated with the new control chart.

7. The method as set forth in claim 5, wherein if the new control chart is a new trend chart, then the method further comprises calculating a plurality of control limit values for the new trend chart by using one or more predetermined functions to obtain optimized control limit values.

8. The method as set forth in claim 7, wherein the one or more predetermined functions are selected from a group consisting of mathematics expressions.

9. The method as set forth in claim 5, wherein if the new control chart is not a new trend chart, then further comprising determining whether the control limit values for the new control chart are the same as the control limit values of at least one of the plurality of SPC control charts.

10. The method as set forth in claim 9, wherein each of the plurality of SBC control charts includes a plurality of control limit values.

11. The method as set forth in claim 9, wherein if control limit values for the new control chart are the same as the control limit values of the at least one of the plurality of SPC control charts, then the method further comprises using on-line values for the control limit values of the new control chart.

12. The method as set forth in claim 9, wherein if the control limit values are not the same, then the method further comprises sending a command to the server for determining whether to create the new control chart, and what control limit values to set.

13. The method as set forth in claim 12, and further comprising adding the new control chart and the plurality of control limit values to a negative list if the new control chart is not created.

14. The method as set forth in claim 3, wherein the determining that information stored in at least one of the plurality of tables has changed is preceded by a step of determining if information stored in at least one of the plurality of tables has changed and by another step of, if the information has not changed, repeating the step

of determining if information stored in at least one of the plurality of tables has changed.

15. The method as set forth in claim 1, and further comprising:
 - determining if the new control chart is a new trend chart;
 - if the new control chart is a new trend chart, calculating a plurality of control limit values for the new control chart;
 - if the new control chart is not a new trend chart, determining if the control limit values of the new control chart are the same as control limit values of at least one of the plurality of SPC control charts;
 - if the control limit values are the same, using on-line values for the control limit values of the new control chart; and
 - if the control limit values are not the same, sending a command to the server for determining whether to create the new control chart, and what control limit values to set for the new control chart.
16. The method as set forth in claim 15, further comprising verifying the format of the plurality of SPC control charts and the plurality of tables.
17. The method as set forth in claim 15, wherein the new trend chart is defined as a control chart that has not been previously used on tools of a type that is associated with the new control chart.
18. The method as set forth in claim 15, wherein the calculating of a plurality of control limit values uses one or more predetermined functions to obtain optimized control limit values.

19. The method as set forth in claim 18, wherein the one or more predetermined functions are selected from a group consisting of mathematics expressions.

20. The method as set forth in claim 15, further comprising adding the new control chart and the calculated plurality of control limit values to a negative list if the new control chart is not created.

21. An SPC control chart building method, comprising:
checking data stored in a database that stores a plurality of SPC control charts to ascertain whether any of the data has changed;
if any of the data has changed, determining whether the changed data can be described by any of the plurality of SPC control charts; and
building a new control chart if the SPC control charts cannot describe the changed data.

22. The method as set forth in claim 21, wherein:
the database stores a plurality of tables; and
the determining comprises checking at least one of the plurality of tables to determine whether the changed data can be described by any of the plurality of SPC control charts.

23. The method as set forth in claim 22, wherein the checking and determining are performed automatically.

24. The method as set forth in claim 22, and further comprising:
determining whether the new control chart is new trend chart;

if the new control chart is new trend chart, calculating values of a plurality of control limits of the new control chart using a predetermined function;

if the new control chart is not a new trend chart and the control limits of the new control chart are the same as the ones in the existing SPC control charts, using on-line values to fit into the control limits of the new control chart; and

if the new control chart is not a new trend chart and the control limits of the new control chart are not the same as the ones in the existing SPC control charts, generating an alarm.